Eeshan Hasan

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PERSONAL PROFILE

I adopt a joint computational and experimental approach to better understand cognitive decision making processes. I use the insights from my research to design and test interventions to improve the quality of decisions in critical environments like medical decision making and social media interactions. My research draws on developments in artificial intelligence to develop methods to understand human decision making. Conversely, I use models of human decisions to design reliable and robust artificial intelligence algorithms.

EDUCATION

08/2022 – Present
Department of Psychological and Brain Sciences, Indiana University
Cognitive Science Program, Indiana University
Phd Student (GPA – 4.0/4.0)
Computational Decision Making Lab. [*Advisor: Jennifer Trueblood*]

08/2019 – 07/2022
Department of Psychology, Vanderbilt University
Masters in Psychological Sciences (GPA – 4.0/4.0)
Computational Decision Making Lab. [*Advisor: Jennifer Trueblood*]

08/2013 – 05/2018
Department of Mathematics, University of Hyderabad
Integrated Masters in Mathematics (Bachelors + Masters)
First Class with Distinction (GPA – 8.8/10.0)

PROFESSIONAL EXPERIENCE

05/2018 – 05/2019
Mathematician - Data Scientist
MyCol – Circle of Life Healthcare Private Limited
The circle of life healthcare private limited works in building Artificial Intelligence and Machine Learning Models to solve problems in healthcare.

AWARDS & HONORS

05/2023
2023 William K Estes Summer Research Award
An award given by the Psychology Department to identify and encourage individuals with a potential for computational modeling.

05/2021
Computational Modeling Award in Applied Cognition
An award given by the Cognitive Science Society for the best applied cognitive modeling paper at the annual meeting:
Improving Medical Image Decision Making by Leveraging Metacognitive Processes and Representational Similarity

08/2020 **Vanderbilt Psychology Scholarship**
An award given in the Psychology department for outstanding performance for the year

08/2019 – 07/2022 **Vanderbilt University Graduate Student Scholarship**
The Vanderbilt Graduate Student Fellowship is guaranteed financial support from the Vanderbilt University. This competitive scholarship is meant to fund doctoral candidates for research and tuition during their stay in the university. The award was relinquished upon moving to Indiana University in 2022.

2018 **JRF - Mathematical Sciences**
The junior research fellowship is a highly selective grant that is awarded to students in India through a competitive examination. It provides funding for them to conducted research in any nationally funded laboratory and for their graduate education.

08/2014-05/2018 **KVPY**
The Kishore Vaigyanik Protsahan Yojana (KVPY) is an on-going National Program of Fellowship in Basic Sciences funded by Department of Science and Technology, India. It has a highly competitive selection procedure with only approximately 50 students being selected for it across all sciences. It provides a generous fellowship for students during their studies and encourages research activity by providing an annual contingency grant.

RESEARCH EXPERIENCE

08/2022 – Present Graduate Student
Computational Decision Making Lab, Indiana University
Dr. Jennifer Trueblood
Computational Models of Decision Making, Wisdom of the Crowd Aggregation Algorithms, Medical Image Decision Making, Food Decision Making, Multiattribute Choice, Attention

08/2019 –08/2022 Graduate Student
Computational Decision Making Lab, Vanderbilt University
Dr. Jennifer Trueblood
Computational Models of Decision Making, Wisdom of the Crowd Aggregation Algorithms, Medical Image Decision Making, Food Decision Making, Multiattribute Choice, Attention

05/2017 – 05/2019 Mathematical Modeler / Data Scientist
MyCol – Healthcare Pvt Ltd.
Mudit Kapoor
A startup that used machine learning to improve healthcare

08/2017 – 05/2018 Research Assistant
Department of Mathematics, University of Hyderabad
Convexity and Applications

08/2016 Research Assistant (Astronomy)

Department of Astronomy, MANUU
Priya Hasan

05/2016 Research Assistant (Cryptography)
Center for Security Theory and Algorithmic Research, IIIT Hyderabad
Kannan Srinathan

PEER-REVIEWED PUBLICATIONS

Hasan, E., Eichbaum, Q., Seegmiller, A. C., Stratton, C., & Trueblood, J. S. (2023). Harnessing the wisdom of the confident crowd in medical image decision-making. *Decision* https://doi.org/10.1037/dec0000210

Hasan, E., Eichbaum, Q., Seegmiller, A. C., Stratton, C., & Trueblood, J. S. (2022). Improving Medical Image Decision-Making by Leveraging Metacognitive Processes and Representational Similarity. *Topics in Cognitive Science*. https://doi.org/10.1111/tops.12588
[Won the Computational Modeling Prize in Applied Cognition Category from the Cognitive Science Society]

Hasan, E., & Trueblood, J. S. (2022). Representational Smoothing to Improve Medical Image Decision Making. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 44, No. 44).

PUBLICATIONS IN PREPARATION

Hasan, E., Duhaime, E., Trueblood J. S., (In Prep) Performance Based Selection and Weighting for Wisdom of the Crowds in Medical Image Decision Making

Hasan, E., Owens, N., Trueblood J. S. (Under Review) A Registered Report on presentation factors that influence the attraction effect *Judgment and Decision Making.*

CONFERENCE POSTERS AND TALKS

2023 Hasan, E., & Trueblood, J. (2023). The Role of Salience-Driven Attention on Multialternative Multiattribute Choice. Abstract published at MathPsych/ICCM/EMPG 2023. Via mathpsych.org/presentation/1203.

2022 **Hasan, E.,** & Trueblood, J. (2022). Representational Smoothing to Improve Medical Image Decision Making. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 44, No. 44).

2022 **Hasan, E.,** & Trueblood, J. (2022). Denoising and Debiasing Medical Image Decisions using Representational Smoothening. *Annual Meeting of the Society of Mathematical Psychology*

2022 **Hasan, E.,** & Trueblood, J. (2022) The Wisdom of the Confident Crowd in Medical Image Decision-making. *Annual Meeting of the Society for Judgment and Decision Making*

2022 **Hasan, E.,** Duhaime, E., Sekhar, T., Trueblood J. S., Improving Medical Image Classification using Wisdom of the Crowds. *Annual Meeting of the Psychonomic Society*

2021 **Hasan, E.,** Trueblood J.S., Eichbaum, Q., Seegmiller, A., Stratton, C.
Leveraging Representational Similarity to Improve Medical Image Decision Making
Society for Judgment and Decision Making
[Accepted as a Talk]

2021 **Hasan, E**., Trueblood J.S., Eichbaum, Q., Seegmiller, A., Stratton, C.
Representational Denoising for Improving Medical Image Decision Making
NeurIPS Workshop on Human and Machine Decision Making
https://sites.google.com/view/whmd2021/home

2021 **Hasan, E**., Trueblood J.S., Eichbaum, Q., Seegmiller, A., Stratton, C.
Improving Medical Image Decision Making by Leveraging Representational Similarity
Society for Mathematical Psychology
[Accepted as a Talk]

2021 **Hasan E**.
Learning Multiattribute Choice in an Unknown Environment
Summer Institute on Bounded Rationality at Max Plank Institute

2021 **Hasan, E**., Trueblood J.S., Eichbaum, Q., Seegmiller, A., Stratton, C.
Improving Medical Image Decision Making by Similarity Based Aggregation
Psychonomics

2021 **Hasan, E.,** Trueblood J.S., Eichbaum, Q., Seegmiller, A., Stratton, C.
Improving Medical Image Decision Making by Leveraging Metacognitive Processes and Representational Similarity
Proceedings of the Cognitive Science Society

2020 **Hasan, E**., Trueblood J.S.
Defining a grammar for strategies in Multi-attribute Choice.
Society for Mathematical Psychology.

2020 **Hasan, E**., Eichbaum, Q., Daniels, P., Trueblood J.S.
Wisdom of the Crowds for Naturalistic Image Categorization and Decision Making.
Virtual Psychonomics

TEACHING EXPERIENCE

2022	The Science of Choice	- *Assistant Instructor*
2022	Introduction to Statistics	- *Assistant Instructor*
2020, 2021	Behavioral Decision Making	– *Teaching Assistant*
2020	Human Sexuality	– *Teaching Assistant*
2019	General Psychology	– *Teaching Assistant*

STUDENTS MENTORED

Ke Lai	Honors Student	Computational Decision Making Lab (2021 – 2023)
	[Now a PhD Student at Duke]	
Nicole Owens	Research Assistant	Computational Decision Making Lab. (2020-2021)

Helena Khalif High School Student Computational Decision Making Lab. (2020-2021)

GRADUATE COURSEWORK

Teaching of Psychology
Philosophy of Cognitive Science
Readings at the Interface of Machine Learning and Cognitive Science
Computational Models of Attention
Emotions
Scientific Writing
Human Cognition
Models of Human Memory
Developmental Psychology
Computational Neuroscience of Vision
Computation Cognitive Modeling
Computational Neuroscience
Bayesian Cognitive Modeling
Psychological Measurement
Introduction to Cognitive Science